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ABSTRACT

This paper reports on a two-year study conducted to evaluate cooperative learning or "group work" learning models in three courses at an Asian university. Data collection methods included a paired pre/post survey of learners, paired observations (early and late) of groups involved in assigned tasks, and two rounds of one-on-one interviews with a subset of learners. The study examined the effectiveness of the group work model on: student achievement of subject matter content; student changes in interpersonal and decision making skills; and student attitudes toward the model. The preponderance of significant changes from pre- to post-surveys on 164 matched questionnaires were negative, suggesting that the existing literature on cooperative or group learning may overstate the benefits such methods can provide. The study results indicated that: (1) group learning is no better than other instructional methods in overcoming problems of implementation; (2) the potential benefits of group learning may not be immediately recognized by students; (3) teachers wishing to employ group work methods must know what barriers their particular students face and take measures to help them overcome their deficiencies; and (4) research must be carefully designed if it is going to arrive at an accurate understanding of what transpires when students are given group learning tasks. (Contains 13 references.) (MAB)

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Sounds good, but that doesn't work here: Postsecondary learners' perceptions of small group learning in an Asian context

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ABSTRACT

This paper reports on a two-year study of a cooperative learning or "group work" model in three courses at an Asian university. Data collection methods included a paired pre/post survey of learners, paired observations (early and late) of groups involved in assigned tasks, and two rounds of one-on-one interviews with a subset of learners. The results are reported for the effectiveness of the group work model on the dimensions of: 1) student achievement of subject matter content, 2) student changes in the skill areas of interpersonal and decision making; and 3) student attitude toward the model. The preponderance of the significant changes from pre to post on 164 matched questionnaires were negative. Four major learning points from the study are: 1) group learning is no better than other instructional methods in overcoming problems in implementation; 2) the potential and benefits of group learning may not be immediately recognized by students; 3) teachers wishing to employ group work methods must know what barriers their particular learners face, and take measures to help learners overcome the barriers; and 4) research must be carefully designed if it is to arrive at an accurate understanding of what is going on when students are given group learning tasks.

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Sounds good, but that doesn't work here:
Postsecondary learners' perceptions of small group learning in an Asian context

There is widespread agreement that the modern workplace demands workers who know how to learn on their own, make decisions, work in teams, and communicate in addition to possessing skills related to a specific job. But there is little agreement as to *how* these skills are to be acquired. A growing sentiment as to *where* these skills are to be developed places most of the responsibility in the realm of education, before people ever enter the workplace. Institutions of higher education are increasingly expected to produce graduates that already possess these skills.[1] If this responsibility is accepted, how is higher education to provide experiences that help learners develop such broad and complex skills?

One approach suggests goals such as learning to think critically, solve problems, make decisions, work in a team, or communicate effectively with others can be regarded as intrinsic to the educational process that is to teach them. In other words, the end is also the means. Instead of passively receiving highly structured information and reproducing it in exams, students achieve these goals by practicing them. A cooperative mentality and group process skills can be acquired in a context conducive to the development of such skills. Learners who are actively working with each other to solve complex tasks should develop the critical thinking, problem-solving and interpersonal skills necessary to keeping up in their work and living environment.

The promise of learning in groups

Western-based educational literature asserts problem-based, collaborative learning taking place in small groups is likely to provide experiences that facilitate learner development of these goals. A review of the educational literature suggests cooperative learning (on which the "group work model" described in this paper is based) is one of the most thoroughly researched of all instructional strategies (Slavin, 1989). Students learn a great deal in making decisions about the learning process and engaging in organizing and planning learning activities, working collaboratively with others, giving and receiving feedback and evaluating their own learning. Sample claims of the advantages of cooperative or group learning include:

1) frequent practice of higher order cognitive processes among peers in small groups helps to transform students' learning strategies (Biggs & Moore, 1993);
2) students improve their skills by experiencing group work processes like pooling resources, making decisions, gaining mutual support, sharing ideas and creating something (Jacques, 1991); and
3) articulating one's ideas in a group setting enhances students' ability to reflect on their assumptions and thought process (Abercrombie, 1969; Damon, 1984).

However, many questions remain. Research-based evidence of cooperative learning helping postsecondary learners develop critical thinking and interpersonal skills is still scanty (Cooper, 1995). More needs to be known about how widely cooperative learning techniques generalize to the increasingly diverse population of postsecondary learners, as well as modifications that may need to be made for cooperative learning to work more effectively for different types of learners or contexts. There is relatively little literature available on small group learning involving minority students, and most if it focuses on African Americans. Treisman (1985) describes a program (in which

[1] As an example, three of the five core skills set as goals for higher education in the United Kingdom are interpersonal or problem solving (listed as "communication"; "problem solving"; "personal skills, working with others and improving own learning and performance") (Otter, 1996).

small group learning plays a major role) that is effective in helping African American college students achieve subject matter mastery (in calculus) and collaborative learning is thought to improve the retention of African American students in higher education (Berry, 1991). Even less is known about how learners from a variety of races and cultures in higher education around the world perceive group learning situations, whether this instructional method is beneficial, and what kinds of modifications might improve effectiveness. For example, how does small group learning work for Asian students?

This paper will contribute to answering the above question by reporting on a two-year study of a cooperative learning or "group work" model in a number of courses at an Asian university. The study methods will be presented next. The results section will explore the effectiveness of the group work model on the dimensions of 1) student achievement of subject matter content, 2) student changes in the skill areas of interpersonal and decision making; and 3) student attitude toward the model. The discussion will touch upon possible strengths and weaknesses of the group work method when used with the Asian postsecondary learners in the context of the present study; and suggest modifications to group work techniques which may improve effectiveness and/or learner comfort with group work methods for Asian postsecondary learners.

METHODS

Study context and design

This funded study has collected data from five cohorts of learners representing different degree programs within a university in Hong Kong. All informants were Asian. Students in the five courses were enrolled in business or engineering programs and came from a variety of educational backgrounds. Learners in three of the five courses supplied the data for the present paper.[2] "Class A" consisted of 120 first year business students enrolled in a year-long leadership skills course. "Class B" was comprised of 44 engineering major students at the bachelor's and master's levels taking the semester-long humanities subject of "Environmental Law". "Class C" was a one-semester course on environmental law that was part of a two-year higher diploma course for 37 students already employed in the field of Environmental Engineering. They had one day release from work each week to attend school. All three classes were required by the respective degree programs and presented a subject matter content that was considered "different" from the majority of the courses in their programs.

Each of the three classes employed a locally developed group work model.[3] Seven characteristics of this group work model are:

1) Permanent heterogeneous groups of four to six students.
2) Multiple clearly structured assignments coordinated with the lecture series and introduced according to level of difficulty.
3) Organized orientation to prepare students for group learning.
4) Team building activities integrated with early tasks to facilitate students' transition to group learning.

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[2] The first and fifth courses are not reported on in this paper as they differed substantially from the middle cohorts. The first course was used as a pilot to test and modify the group work model and data collection instruments and procedures for the evaluation of the model. The fifth course received a substantially revised model of the intervention based upon what was learned from the previous courses.

[3] A detailed description of the model is available in: Csete, J. M., Yan, L. & Kwan-Liddle, M. (1996). *Enhancing subject matter, decision making and interpersonal skills through group work: A case study in teaching environmental law for employees of the public and private sectors.* In N. S. Antonio & H. Steele (Eds.), The Second South China International Business Symposium Proceedings: Vol. 2 (pp. 935-949). Macau: University of Macau.

5) Maximized opportunities for practice (targeting 50% or more of class time devoted to group work activities).
6) Built in monitoring and feedback collection mechanism (including class time devoted to monitoring how the groups are progressing).
7) Assessment addressing higher level conceptual learning, team management skills and individual responsibility.

One of the points to be made in the discussion is that not all students experienced all of the above seven characteristics. However, they could in general be assumed to have experienced a course in which they were required to work on numerous tasks in groups and each of these tasks had been designed with the expressed aims of promoting problem-solving, decision making, communication and interpersonal skills while simultaneously working with subject matter related content.

Data collection methods in the study included a paired pre/post survey of learners, paired observations (early and late) of learning groups involved in assigned tasks, and two rounds of one-on-one interviews with a subset of learners. This use of multiple data sources allowed both qualitative and quantitative information to be collected across time (before, during and after experiencing the instructional intervention), and from multiple perspectives (students' self assessment, lecturers' assessment, independent observers' assessment of group skills and external examiners' grading of subject matter achievement).

Questionnaires

The major source of evidence for this paper is 164 paired (pre/post) questionnaires completed by learners in three courses. The questionnaire was constructed to capture changes in learner perceptions on four variables:

1) achievement of the subject matter;
2) enhancement of interpersonal skills;
3) enhancement of decision making skills; and
4) attitude toward the group work method.

Multiple measures were constructed for each of the variables. (Refer to Table I for the measures.) Commonly used questionnaire construction techniques such as ungrouping the multiple measures so that the variables of interest would not be of immediate evidence to respondents, and reordering questions between the pre and post questionnaires were used.[4] The questionnaire was piloted twice. The first pilot involved administering the questionnaire to individuals and asking detailed questions about their understanding of the instructions and questions. After revision, the second pilot involved administering the pre and post questionnaires as part of a full-blown trial of the small group method in a semester-long course.

The final versions of the questionnaire varied slightly from pre to post. However, each asked learners to indicate how much experience they had with group work in both school and employment settings, and to rate and rank the importance of five skills and give a personal assessment of their achievement of them. The two question groups that were of primary focus were the 16 items relating to the four variables of interest (see Table I) and three open-ended questions which asked learners to indicate three things they liked about working in groups, three things they disliked about working in groups, and things they "usually do" to help get group work done.[5]

Data analysis

Only the 164 paired pre and post questionnaires were included in the quantitative analysis as this allowed for greater precision in statistical tests and fulfilled the study goal of looking for changes over time. Quantitative analysis of rank order and likert scale responses and qualitative analysis of written responses to open-ended questions

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[4] Many of the techniques used were drawn from Fowler's text Survey Research Methods, published 1993 by Sage.

[5] Copies of the questionnaires are available from the first author.

were conducted. All statistically significant results are for paired samples t-tests (two-tailed) at the significance level of $p < .05$. Open-ended questions were analyzed qualitatively using a system of coding and categorizing all written responses, and testing for coder and category reliability as described in Fink (1995), Lincoln & Guba (1985), and Tesch (1990). Tentative findings from the questionnaires were triangulated with the observations and interviews for confirming and disconfirming evidence. Although the major focus of the paper is on the data collected from the questionnaires, information from the observations and interviews, which naturally is more detailed, is used to further describe and explain phenomena of interest.

RESULTS

The results of the quantitative analysis of the 16 measures relating to the four variables of "subject matter", "interpersonal skills", "decision making skills" and "attitude toward method" are depicted in Table I. All significant differences from pre to post tests on the paired samples t-tests ($p < .05$) are indicated by arrows, with the direction of the arrow indicating either a significant increase (up arrow) or decrease (down arrow) from pre to post scores. Even a quick scan of Table I reveals the differences between classes (part of which can be accounted for by context) as well as the overwhelming change for the "negative" in significant pre/post differences. Of the 17 statistically significant changes, only four (indicated by a "+") could be construed as positive.

An analysis of the open-ended questions asking students to list three things they liked and disliked about learning in groups is presented in Table II. The categories emerged from examining the written comments. It was found that six categories captured the range of comments students made regarding what they liked about working in groups and eight categories captured the comments regarding what they disliked. The numbers in each of the boxes represent numbers of pre and post questionnaire comments that fit the category and are to be considered as indicative of trends only.[6] The categories are listed from the most to the least frequent.

Results for each of the four variables of interest will be reported in turn.

Subject matter

As illustrated in Table I, each of the three classes had at least one of five possible measures which indicated a significant change for the negative. The first three measures could be construed as relating to mastery of subject matter content. There was only one significant change toward the negative on these measures. In all three classes there was no significant change in two measures that asked about the quality of group projects or impact of group work on an individual's final course grades, but one class indicated a change for the negative regarding the impact small group learning had on achieving course objectives. The fourth and fifth measures compared the effectiveness of learning in groups to learning alone or from the lecturer. There seemed to be greater negativity on this dimension. Students in Classes A and C indicated a change for the negative when comparing how much they felt they were learning from peers to studying alone, and students in Class C compared learning in small groups negatively to learning from the lecturer.

Conversely, Table II indicates students perceived the major benefits of group work as enhancing understanding of subject matter. The two most frequent categories of written comments on both pre and post questionnaires for all three classes were about small

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[6] Note that written comments from all returned questionnaires (not just matched pairs) are included in these tabulations. In Classes A and B more pre questionnaires were returned than post questionnaires and this is likely to account at least in part for the lower numbers of comments for almost all categories on post questionnaires. (Return rates for pre and post questionnaires were 117/97 for Class A, 42/37 for Class B, and 34/35 for Class C.)

groups helping them learn the subject matter, and exposing them to a greater quality and quantity of ideas related to the subject or tasks (see Table II). Thus, although students indicated through written comments that they thought group learning was helping them learn the subject matter, it still was rated lower when compared to other learning methods in the quantitative measures.

For two of the three courses, student perception of no significant changes for the better in achievement of subject matter stood in marked contrast to actual performance on projects, examinations and in final grades obtained.[7] One student failed and one student had to resit the examination in Class B. This rate is similar to the previous four years in which the small group method was not used. However, in the year studied, substantial improvements were noted in overall grade scores for the class with one student receiving an unprecedented "A+" and the lowest passing grade being a "C+". In each of the previous four years, at least 10% of the class had marginally passed with a grade of "D". Even greater improvements in final examination scores were exhibited in Class C. In the four years preceding the year studied, four or five students had failed the course every year. This high failure rate had been noted and the course had been criticized by an external examiner as being "too complicated". In the year in which group work was used, there were no failures (although two students had to resit the examination). In both classes, these improvements in examination scores suggested real improvements in student achievement in subject matter as neither examination questions nor grading procedures had changed substantially from those in previous years. As the post questionnaires were administered in final class meetings before the final examination was taken and grades were given, the authors wonder whether students might have perceived greater achievement of subject matter if they had been asked the same questions after the course was over!

Interpersonal skills

The five items listed under "Interpersonal Skills" in Table I attempted to assess students' perceptions of changes in their own interpersonal skills. Quantitative results for this variable were the most mixed. Class A indicated four significant changes, with only one being a change for the positive. Class B indicated three significant changes, two of which were for the positive. Class C indicated no changes.

Upon consideration, the only item indicating a significant change for the "positive" in two classes may be more attributable to maturation over time and increased familiarity with peers rather than to the group learning method. Although the literature suggests students may find sharing ideas and opinions in small groups helps them make the transition to speaking to even larger groups, it is questionable whether the item "I am comfortable expressing my ideas to the whole class" is even a valid measure.

Students in Class A indicated significant changes for the negative in three interpersonal skills areas. Their perception of the ability of group work to enhance their teamwork and communication skills lowered over time. They also lowered their assessment of their own ability to contribute to group projects. Students' perceptions of lack of improvement in interpersonal skills were corroborated by observations of performance of small groups early and later in the academic year. Only two or three of the 12 small groups observed in Class A were characterized by observers as being productively involved in the tasks and exhibiting increased interpersonal and decision making skills. The remaining groups exhibited one or more of the following counterproductive interaction patterns: superficial involvement (avoiding discussion and coming to a conclusion quickly), noisy but unproductive involvement (lacking skills for managing conflict and making progress on the set task), and marginal involvement (with only some group members participating). The following excerpt from an observer's notes illustrates how weak interpersonal skills led to noisy but unproductive involvement:

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[7] Class A was assessed by coursework, with only one of the three assignments related to the group work tasks.

> When handling diverse opinions in the discussion, the group is tense. Especially person C in the group has a very critical attitude towards other's choices. The other members often fight back. ... There is a lot of argument and bargain the communication. Although person C is a dominant figure in the discussion, the other members are not so afraid of him and they can voice out their opinions eagerly. It is a positive result. But the effectiveness of the group is not high when a lot of time is put into argument.
>
> (Observation notes, Group B2, 11/97)[8]

In Class B students indicated a significantly lower expectation to the comment "Working in a group enhances my teamwork skills". Conversely, the same class of students also registered a statistically significant change toward the positive to the comment "I am able to resolve conflicts in groups". As increased ability to resolve conflicts would usually be construed as a valuable teamwork skill, it is curious that the two trends opposed each other.

But this paradox of positive and negative attitudes being simultaneously held is not limited to the quantitative measures. A comparison of the "likes" and "dislikes" categories in Table II shows that many characteristics were construed both positively and negatively. For example, written comments categorized under "group solidarity" often expressed appreciation of working as a team or the positive group atmosphere, yet under "dislikes" other categories such as "individual contributions" (referring to uneven contribution among group members, or even their own shyness about speaking) and "difficult to come to an agreement" highlighted the flip side of the situation. Especially interesting to note is that it was fairly common for individual students to list similar phenomena under both the "like" and "dislike" questions in the same questionnaire. As an example, one student who wrote about liking "discussion with other classmates", "share experience and ideas", and "learn communication with others" also reported disliking "argument happens because of different ideas".

Decision making skills

The three measures of decision making skills for the quantitative analysis are depicted in Table I. Note that all three measures were attempting to assess students' perceptions of the benefits of the small group method, rather than their own skills at decision making. It is also difficult to separate interpersonal and decision making skills. All four of the statistically significant changes were for the negative with two classes indicating lower agreement scores on two of the measures. Students in Classes A and B gave lower post scores to the comment "I learn from other people's ideas and opinions" and Classes A and C indicated greater disagreement to the comment "I believe a group can arrive at a better decision than an individual can". There were no significant pre to post changes to the comment comparing learning problem solving skills by working alone to working in a group.

Again, student perception of the group work method failing to draw out these decision making skills was mirrored by observations of small groups in Class A. Many of the groups were observed arriving at a conclusion very quickly, then devoting left over group work time to other topics or activities (usually of a social nature). Rather than spending time to explore alternative points of view and building upon each other's ideas, differences of opinion or alternate ideas were discouraged, sometimes by "blatant" methods such as group leaders ignoring dissenting voices. Student comments

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[8] All quotes from surveys, observations and interviews are either verbatim English or unedited translations from Chinese. Students were encouraged to conduct small group discussions and express their opinions about the group work method in their native language. Native language speakers collected the data.

on the questionnaires and interviews also suggested many felt pressure to arrive at a quick compromise. In the words of one student:

> [Though my attitude is quite different from my group members,] I was not the dominant one [in the team]. It is always like that. Someone say, 'Okay, let's write that'. I did not say, no, no, let's discuss it.
>
> (Student Interview, D1, 11/96)

Attitude toward method

Students had little previous experience in working in groups. In fact, between 62% and 91% of the students in the three classes indicated they had "never" or only "sometimes"[9] worked in groups in secondary school. This relative lack of previous experience with group work should be born in mind when interpreting the following results regarding attitude toward method.

The three items on attitude toward the group work method are listed in Table I. Students' perceptions of the effectiveness of group work in achieving the three previous variables of subject matter, interpersonal and decision making skills are also indicative of their attitude toward working in groups. The three quantitatively measured items listed here were more of a "catch all" to collect attitudes toward time spent on group work and preference for group work compared to other methods of learning.

The results were also inconclusive for this variable. Only one of the three classes indicated a statistically significant change in pre to post scores on one of two items asking whether working in groups takes more time than working alone. The written comments also illustrated the conflicting attitudes related to time spent in groups. Many of the things students liked about working in groups under the categories of "workload" and "effectiveness and efficiency" related to group work saving time. Yet many students also were frustrated by how much time group work took. In fact, the category that captured by far the most comments about what students disliked on the post questionnaires was titled "time consuming".

For the remaining item under attitude toward method, only one of the three groups indicated an increased preference for working in groups rather than working alone. This finding is supported by written comments that mentioned group projects relieving pressure to perform individually. Two trends that were common in one-on-one interviews shed further light on attitudes toward time and preference for group work over other methods. First, when describing how students worked in groups in university, they rarely described a truly collaborative effort. Many students described group work as saving time because each person then only had to do one part of a larger task. A second trend was that students expressed a desire to work in groups for subjects that they were less familiar with or felt weaker in. Under these circumstances they saw sharing ideas and opinions and being able to ask questions of peers as helping them learn. But if they felt confident in a particular area, they preferred to study individually as they could master the material more quickly.

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[9] "Sometimes" was further described as "about one subject every school term" in the questionnaire.

Table I:
Changes in learners' perceptions of four variables

		Class A (n=95)	Class B (n=37)	Class C (n=32)
	Subject Matter (expect all to raise)			
1.	I feel a group project is of a higher quality than an individual project.			
2.	I believe working in a group will help me achieve a higher grade in the course.			
3.	Working in groups will help me achieve the objectives of this course.	↓		
4.	I believe I will learn course materials from my group mates that I could not learn from the lecturer.		↓	
5.	I believe I will have a better understanding of the course materials as a result of group work than I would have if I study alone.	↓		↓
	Interpersonal Skills (expect 6,7,8,9 to raise, unsure on 10)			
6.	Working in a group enhances my teamwork skills.	↓	↓	
7.	Working in a group enhances my communication skills.	↓		
8.	I believe I can contribute to getting group projects done.	↓		
9.	I am comfortable expressing my ideas to the whole class.	↑ (+)	↑ (+)	
10.	I am able to resolve conflicts in groups.		↑ (+)	
	Decision Making Skills (expect 11 & 12 to raise, 13 to drop)			
11.	I learn from other people's ideas and opinions.	↓	↓	
12.	I believe a group can arrive at a better decision than an individual can.	↓		↓
13.	I believe I will learn more problem solving skills by working alone than I would by working in a group.			
	Attitude Toward Method. (expect 14 to raise, 15 & 16 to lower)			
14.	I expect to spend less of my own time on a group project than I would if I did the entire project by myself.			
15.	I believe if something is done by a group, it takes more time than if done by myself.	↑		
16.	I prefer working alone compared to doing an assignment in a group.		↓ (+)	

Key
$p < .05$
arrows indicate direction of significant difference (increase or decrease)
"+" indicates significant difference can be construed as a change for the "positive"

Table II:
Tabulated summary of written comments by category

Likes	Class A	Class B	Class C	Totals
Learning(process)	125/69	**26/41**	28/27	179/137
Quality & quantity of ideas (product)	70/43	29/16	19/17	118/76
Workload (process)	57/28	28/14	11/6	96/48
Group solidarity (process)	**40/43**	11/5	**10/17**	**61/65**
Effectiveness & efficiency (product)	24/24	18/14	16/5	58/43
Enjoyment (process)	19/16	10/6	**9/10**	38/32
(Totals)	335/223	122/96	93/82	550/401

Dislikes

Argument & conflict	82/30	32/17	**10/14**	124/61
Time consuming	**57/59**	25/24	33/28	115/111
Individual contributions	43/32	14/5	17/13	74/50
Difficult to come to an agreement	40/27	18/10	15/8	73/45
Difficult to arrange meetings	51/12	14/7	3/5	68/24
Uncooperative members	18/10	3/2	7/2	28/14
Stress	20/2	5/1	1/1	26/4
Group decisions not followed	9/2	4/1	1/1	14/4
(Totals)	320/174	115/67	87/72	522/313

DISCUSSION

The results described above depict a much less rosy picture than so much of the literature on cooperative or group learning suggests. The authors draw four major learning points from the study.

First, group learning is no better than any other instructional method in overcoming problems in implementation. Class A provided the majority of statistically significant results of the study (all but one negative). However, information gathered from the qualitatively oriented observations and interviews suggested the problems were more with the course as a whole rather than with the group work method in particular. Observations and interviews showed that the carefully laid out group work method was frequently deviated from in the six seminar groups led by different instructors. Although the purposes and materials for all group activities were written down in the course handbook, students were often left on their own to complete the tasks. Some lecturers were present but hardly spoke a sentence beyond instructing students to complete the task on a given page in the handbook, and in other seminars the lecturer didn't even show up, leaving the students to work on the tasks completely on their own, without feedback or checks on accountability. In fact, Class A of this study would better serve as an example of the things <u>not</u> to do when attempting to use a group work method!

Second, the potential benefits of group learning may not be immediately recognized by students. In the present study, in the absence of external markers such as course grades or examination scores, students did not perceive small group learning as

contributing to their achievement of subject matter knowledge even though there was strong evidence in two courses that there had been a large impact in this area. It is even harder to assess other potential benefits of small group learning such as improvements in interpersonal or decision making skills, or in "critical thinking". Teachers employing group work methods should ask themselves whether they are actually assessing students on all the skills they are intending the method to address (and not simply the more "bookish" subject matter) and providing feedback to students on their progress in these areas.

Third, teachers wishing to employ group work methods must acknowledge that their learners face formidable barriers when using group learning methods and try to help their learners overcome them. In the present study two major barriers were that group work was time consuming and that students were uncomfortable with the arguments and conflicts that could develop in groups. The issue of time is common in the literature on group learning and people interested in using group methods can refer to the literature for ideas that might be of use for their particular learners and context. However, the prevalence of student concerns about arguments and conflicts in the present study suggests Asian students may have an issue with working in groups that rarely emerges as important for western students. There is some indication that for western students information or opinion that goes against the major preference of the group is less likely to be shared because of fear of negative comment or breaking of group harmony (Hackman & Kaplan, 1974). But for at least the Asian learners in this study, the fear of getting into arguments or conflicts with other group members inhibiting their comfort in working in groups, as well as their willingness to participate fully and honestly in the group was a major barrier to the effectiveness of group work methods.

And finally, this study highlights the need to give careful consideration to how to effectively arrive at an understanding of what is going on when students are given group learning tasks. We need to be more clear about what we are hoping group work will achieve, and then come up with ways of collecting information indicative of achievement in those areas. The present study is an example of how difficult it is to come up with valid and reliable measures of dimensions of interest. Too often, group learning methods are touted as the solution for teaching students vaguely defined skills (such as "decision making" or "critical thinking") which are also very hard to evaluate. If group work methods are be proven a solution to helping students achieve a complex array of skills, detailed studies that critically evaluate what students are actually achieving need to be conducted. It is all too easy for studies to report "satisfaction" with group learning methods on "happiness measures" when what students may actually be expressing is a positive attitude toward the opportunity to chat and socialize with friends that poorly used group work time allows for (and our students indicated in interviews they enjoyed about group work).

Small group learning is an instructional technique that is being ever more widely used in postsecondary education. Though the aims of the instructional approach are laudatory, more needs to be done to determine the effectiveness of the approach as well as its applicability to a variety of learners. It sounds good, but despite our best intentions and efforts, it didn't work very well this time.

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